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ABSTRACT

A study was conducted to gather information about the use of microcomputers within the learning disabilities (LD) programs in California community colleges. Surveys were sent to all 106 two-year colleges in the state, requesting information on the number of students enrolled in LD programs, the kind and number of computers used in the LD programs, computer availability to students and LD instructors, microcomputing plans, decision making, funding sources, cooperation with other departments, ways in which the computers are used, and use of or interest in particular computer programs. Study findings, based on responses from 43 colleges, included the following: (1) 20 of the colleges had medium-sized programs, serving between 60 and 95 LD students; (2) very few of the colleges were serving limited- or non-English-speaking students in their LD programs; (3) 27 of the colleges reported that their LD students had their own microcomputers at home; (4) 35 colleges reported that they utilized microcomputers within their LD programs, with a range of one to five microcomputers per program; (5) 24 of the respondents did not feel that their faculty was sufficiently knowledgeable about microcomputers; and (6) 15 colleges indicated that microcomputers were being used to support the activities of LD faculty for both instructional and noninstructional purposes. The survey instrument is provided. (AYC)

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ED286564

Microcomputer Use
in
Learning Disabilities Programs
at
California Community Colleges

by

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Post Doctoral Fellow

June 12, 1987

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JC 870439

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This study is an exploratory endeavor into the use of microcomputers in the Learning Disabilities Programs at the California Community Colleges. Originally questionnaires were sent to all 106 community colleges in California. Subsequently it was discovered that sixteen colleges did not have Learning Disabilities Programs. Seven of these colleges returned blank questionnaires or sent explanations that they would be unable to complete the survey. Forty-three colleges, from 39 districts, out of the remaining 90 colleges completed surveys. This was a response rate of 48%, and very close to half of the community colleges in the state with active Learning Disabilities Programs. The two maps with the shaded areas in the appendix of this report indicate the participating districts and colleges. Geographically these 43 colleges are a good sample of the community colleges within the state. The state was divided into three major geographical locations. The northern section consists of colleges from San Jose to the Nevada border and up to the Oregon border. The central section is comprised of colleges from Monterey peninsula to the Nevada border and down to College of the Canyons and east to the Nevada border. The southern section takes in colleges from Los Angeles Mission, east to the Nevada/Arizona borders and south to the Mexican border. Twelve colleges or 27.9% were from the north, nineteen or 44.2% were from the south and twelve or 27.9% were from the central part of California.

The survey attempted to elicit information in the three major areas of program organization, administrative issues concerning the use of microcomputers, and the instructional use of microcomputers within the Learning Disabilities Programs.

The number of students within the LD programs ranged from 14 to 350 with an average program size of 91 students from 41 colleges with two colleges not responding. The LD program size was reduced to the following three categories:

	Number	Percent	Ave. Size
Small (14-49)	11	27	33
Medium (60-95)	20	49	79
Large (116-350)	10	24	181
Total (14-350)	41	100	91

Almost half of the colleges have medium size LD programs, slightly over a quarter have small programs and almost another quarter have large programs. The size of the LD programs was compared with the location of the colleges within California in the following table.

College Location	LD Program Size				
	NR %	Small %	Medium %	Large %	Total %
North	1 (8.33)	4 (33.33)	6 (50.00)	1 (8.33)	12 (100)
South	1 (5.26)	5 (26.32)	5 (26.32)	8 (42.11)	19 (100)
Central	0 (0.00)	2 (16.67)	9 (75.00)	1 (8.33)	12 (100)
Total	2 (4.65)	11 (25.58)	20 (46.51)	10 (23.26)	43 (100)

Six or 50% of the northern colleges have medium size LD programs. Eight or 42.11% of the Southern colleges have large size LD programs and 75% or nine of the central colleges have medium size LD programs.

It appears that very few of the colleges were serving limited or non-English speaking students in their LD programs. Sixty-five percent of the colleges did not know or were not serving any limited English proficient students. Three colleges or 7% were serving a total of 19 such students, with one college serving 15 and the two other colleges serving two each. Twelve other colleges or 28% estimated that they had a total of 120 limited English proficient students. Two of these colleges served one student and the other sixty students. The other 10 colleges estimated serving from 2 to 11 students

each. Ninety-three percent of the colleges did not know or were not teaching any non-English proficient students in their LD programs. Two colleges or 5% were actually serving two such students each and one college or 2% estimated that it was also teaching two of these students.

Well over half of the colleges, 27 or 63% reported that students in their LD programs had their own microcomputers at home. Five colleges or 12 percent reported an actual total of 15 students with their own microcomputers. Another 22 colleges or 51% estimated a total of 176 students had microcomputers at home.

Eighty-one percent or 35 of the colleges reported that they utilized microcomputers within their Learning Disabilities Programs. These 35 colleges used a total of 200 microcomputers with 65% or 130 being Apple Computers, 21% or 41 IBM's and 14% or 29 being various other brands. Regardless of the size of the LD Program or the location of the college within California the largest percentage and number of colleges in all these categories were using 1-5 microcomputers within their LD programs.

Eighty percent of the colleges reported that they had at least 2 disk drives per microcomputer. Over half of the colleges (54%) using microcomputers in their LD programs stated that they also had printers. The two most popular locations for the 35 colleges using microcomputers within the LD programs was the lab or center (31.4%) and the LD classroom (28.6%).

Sixty-five percent or 28 of the colleges reported that microcomputers from the college were available to LD programs. These 28 colleges had a total of 1163 microcomputers available for LD students. These microcomputers consisted of 333 Apples (28.6%); 649 IBM's (55.8%); one Radio Shack (.1%); 6 Commodores (.5%); and 174 other brands (15%). It is clear that IBM microcomputers were the most available to LD students through general college

facilities. In contrast, Apple microcomputers were used by more colleges within the LD programs themselves. Within the small LD programs the largest percentage and number of colleges had available 1-14 college microcomputers for the use of their LD students. In contrast, within both the medium and large LD programs the greatest percentage and number of colleges were those with no college microcomputers available to LD students. Among the northern colleges the greatest availability was 21-60 college microcomputers for their LD students. In contrast the majority of Southern colleges had no availability to college microcomputers and most of the central colleges had 1-14 college microcomputers available to LD students. Only 46 percent of the colleges stated that they had at least 2 disk drives per college microcomputer. Only 23% of the colleges reported that the college microcomputers available to LD students also had printers. The most popular location for the 28 colleges having college microcomputers available for LD students was the various college microcomputer labs and centers (71%).

Seventy percent or 30 of the colleges stated that there was an individual at their college who was identified as the microcomputer expert or coordinator. The majority of these colleges indicated that this position was filled by college personnel.

Almost half (47%) or 20 of the Learning Disabilities Specialists stated that their microcomputer skills were at the introductory level. Another 15 or 35% responded that their microcomputer skills were at the intermediate and advanced levels.

The last organizational variable was concerned with the amount of access that the LD specialists or the LD programs in general had to microcomputer use. Fifty-five percent or 24 of the colleges recorded that they had daily use of microcomputers through their Learning Disabilities classes. The next greatest

amount of access to microcomputers was through unspecified, variable or occasional schedules (9 or 20%).

Several variables were chosen in an attempt to illustrate the variety of administrative issues that abound in the use of microcomputers within Learning Disabilities Programs at the community college level. Close to three-quarters of the colleges, 32 or 74%, stated that their college Disabled Student Program and Services (DSPS) department did have a plan for incorporating microcomputer use into their Learning Disabilities Program. Those colleges with small LD programs had the largest percentage and number of colleges claiming that they did have a plan. Similarly, northern colleges had the largest percentage and number of colleges stating that they did not have a plan and the central colleges with the greatest percentage and number reporting that they did have a plan. The majority of LD specialists reported that in general they felt comfortable making various microcomputer decisions. This majority consisted of 30 or 70% of the colleges. The northern colleges and those with medium size LD programs had the largest percentage and number that felt uncomfortable making microcomputer decisions. On the other hand, the southern colleges and those with small LD programs had the greatest number and percentage that felt comfortable making microcomputer decisions.

Two questions were asked to determine which personnel were involved in decisions to purchase microcomputers and software for the Learning Disabilities Programs. Eight distinct personnel and committees were listed as possible responses. It is now clear that the decision makers for these two areas for many colleges is not exclusively only one of the eight choices provided. For both questions the first three responses were exclusively chosen by some of the colleges. In the first questions up to 12 and in the second question up to eleven separate combinations using the original eight

choices were selected. In both questions the majority of colleges selected the combination of Disabled Student Program and Services Coordinator and LD Program Specialist. These two personnel were chosen by 10 or 23.26% of the colleges as the decision makers involved in purchasing microcomputers for their LD programs. These same personnel were chosen by 14 or 32.56% of the colleges as the decision makers involved in purchasing software for their LD programs.

One question was asked to discover how decisions were made to schedule the use of microcomputers within LD programs. The question was designed with six original exclusive responses. In responding, the colleges produced three additional combination responses. The majority of colleges, eleven or 25.6%, chose the category "other" to describe how they decided to schedule the use of microcomputers. The following are the explanations that they submitted: first come first served; as needed; Learning Disabilities Specialist decides; classroom schedule; lab; class enrollment; within class; when free; scheduled sessions and independently for mainstreamed classes. The second most popular choice was a tie between the "Sign-up Sheet" and "not applicable" with nine colleges and 20.9% each.

Three questions were included in the survey to find out the major funding sources for the purchases of microcomputers and software and for microcomputer staff training within the Learning Disabilities Programs. Seven separate funding sources were originally provided. In the first and second question, nine additional distinct combinations using the original seven funding sources were created. In the third question four unique combinations were developed in addition to the original seven responses. In all three questions, the most popular choice of the colleges was the Disabled Students Program and Services (AB77) funds. Therefore, seventeen or 39.5% of the

colleges indicated that this funding source was used to purchase the microcomputers within their LD programs. Similarly, twenty-two or 51.2% of the colleges recorded this funding source for the software purchases within their LD programs. Likewise, fourteen or 32.6% of the colleges reported this same source responsible for funding microcomputer training for their LD Program staff. It should also be noted that the majority of combination responses in all three questions included the choice of Disabled Students Program and Services (AB77) funds. The results from these three questions appear to indicate that the LD programs at the California Community Colleges are heavily dependent on the special funds from the chancellor's office (DSPS-AB77) to support these three related microcomputer activities within the LD programs. On the other hand, the results also seen to suggest that other funding sources are also being creatively sought by LD programs throughout the state.

Two survey questions were designed to find out if LD instructors participated in microcomputer training, and if so, what type of training and how many hours were devoted to this training. The majority of the colleges (24 or 56%) did not participate in microcomputer training during Spring semester, 1987. However, of the 19 or 44% of the colleges that did participate, 8 or 42% were trained by the California Community Colleges Chancellor's Office High Tech Center in Sacramento. The second largest group had college or district inservice training. This was a group of six or 31.6% of the colleges receiving any type of training. Out of eight specific microcomputer training providers three provided the most hours ranging from 1-5 hours to 41 or more hours. College staffs provided from 77-181 hours of training to 13 different colleges or 5.9-13.9 hours per college. DSPS staffs provided from 63-269 hours of training to 12 different colleges or 5.3-22.4

hours per college. The information from these two questions points to the paucity of training being provided for LD Program staff in the use of microcomputers. It also points out that providers that are available to the K-12 schools and districts such as the Special Education Resource Network (SERN) are evidently not available nor used by community colleges. This area of microcomputer training for LD programs is definitely one that the CCC Chancellor's Office hopefully will expand through their recent establishment of the High Tech Center for the disabled.

The last question concerning administrative issues had eleven variables. The colleges were requested to indicate whether the eleven variables were accurate or inaccurate descriptions of the implementation or expansion of microcomputer use within their individual Learning Disabilities Programs. The total responses from the 43 colleges were split almost evenly between the two categories of accurate and inaccurate descriptions. The first category received 43% and the second category had 42% with 15% being no responses. When comparing the two categories by the number of variables chosen by each college the split is even more dramatic, witness the following table:

Variables chosen by each college	Accurate description		Inaccurate description		Total	
	#	%	#	%	#	%
0	4	9	8	18	12	14
1 - 5	22	51	18	42	40	46
6 - 11	17	40	17	40	34	40
Total	43	100	43	100	86	100

If each category was compared by 0-5 variables each category would have 26 colleges and 60% apiece.

Five of the individual variables had substantial numerical and percentage differences between the two categories. The first variable stated that there was sufficient LD faculty knowledge of microcomputers. Twenty-four or 55.81% of the colleges responded by indicating that this was an inaccurate description of their LD programs. The southern colleges and those with medium size LD programs were the majority of these colleges. The second variable mentioned that there was sufficient microcomputer software available. Twenty-five or 58.14% of the colleges reported that this was an inaccurate description of their LD programs. Again it was the southern colleges and those with medium sized LD programs that made up the greatest number and percentage of this group. The third variable claimed sufficient fiscal resources for the implementation or expansion of microcomputer use within the LD programs. Twenty-eight or 65.12% of the colleges recorded that this was an inaccurate description of their programs. Once again the southern colleges and those with medium size LD programs were in the majority. The fourth variable declared that administrators had positive attitudes toward the implementation or expansion of microcomputers within the LD programs. Thirty-one or 72.09% of the colleges proclaimed that this was an accurate description of their programs. In contrast, 7 or 16.28% of the colleges did not respond to this variable and another 5 or 11.63% of the colleges stated that this was an inaccurate description of their programs. Among the majority of colleges that agreed with the description were colleges from the south and those with medium LD programs. Within those colleges not responding to this variable, the most predominint were southern and central colleges and those with medium LD programs. Those colleges that disagreed with the variable had a large following from southern colleges and those with small size LD programs. The last variable put forth that college faculty had positive attitudes toward the

implementation or expansion of microcomputer use within LD programs. Thirty-two colleges or 74.42% were in total agreement with this variable while only 4 or 9.30% disagreed and another 7 or 16.28% did not respond. From those colleges in agreement with the variable the majority were from the south and with medium LD programs. The four colleges that disagreed were split with two from the North and two from the South and three had small LD programs and one had a mediuim LD program.

The final phase of this study looked into the instructional use of microcomputers within the Learning Disabilities Programs in the California Community Colleges. Through the survey several questions were asked to generate a variety of variables that hopefully will shed some light in this area. It is abundantly clear that well over three-quarters of the colleges surveyed had exclusive self-contained classes for professionally assessed learning disabled students within their LD programs. In fact 79% or 34 colleges had these classes and only 9 or 21% did not. In another related variable the majority of colleges (15 or 34.9%) indicated that microcomputers were being used to support the activities of LD faculty both for instructional and non-instructional purposes. An additional eleven or 25.7% indicated that microcomputers were being used only for instructional purposes. More emphatically, close to 80% of the colleges stated that their LD instructors had access to and used microcomputers for LD instruction. The majority of these 34 colleges had instructors that had been using microcomputers for 13 to 36 months or more.

Southern colleges and those with medium size LD programs were also in the majority of those 34 colleges whose LD instructors utilized microcomputers in their courses. The greatest number (16) and percentage (76.2) of those instructors owning microcomputers also used microcomputers for LD instruction

at their respective colleges. The majority of these same colleges were from Southern California and with medium size LD programs. The colleges were asked if their LD programs or in conjunction with other college departments offered up to five different types of opportunities for their students to use microcomputers. The colleges responded to the five choices and in addition created and selected an additional eight combinations from these five choices. Two of these combinations were the most popular among the colleges. Ten or 23.3% stated that their LD programs encouraged LD students to enroll in college microcomputer classes and also that their LD programs offered LD courses that used microcomputers in the class. Another five or 11.5% (1) encouraged their LD students to enroll in college microcomputer classes and (2) offered LD courses that used the college CAI labs.

The colleges were asked if microcomputers and software in their LD programs were used to teach students to (a) learn to make the best decision or (b) talk about an idea or discovery in the lesson. The majority of the colleges responded that they used neither strategy (17 or 39.5%) or that they did not use computer assisted instruction (7 or 16.3%). However, among those colleges using these strategies, nine or 20.9% used strategy (a), two or 4.7% used strategy (b) and eight or 18.6% used both strategies for a total of 19 or 44.2%.

The colleges were asked if any of their LD instructors chose instructional software to be used in conjunction with the following stages in the process of learning new information or a new skill:

(a) Initial acquisition of new learning, where the goal is accuracy.

(b) Mastery of a new task, where the goal is accuracy and speed.

(c) Generalization or transfer of new learning where the goal is to enhance performance in nonspecial environments.

Only 15 or 34.9% of the colleges responded that they did not choose software to be used with any of these three stages. On the other hand, close to two-thirds of the colleges reported that they chose instructional software to be used with one or more of these three stages in the process of learning new information or a new skill. Specifically, 28 or 65.1% of the colleges selected software in this manner.

The colleges were requested to match five types of software with seven educational methods that were used by their Learning Disabilities programs. Drill and practice software was chosen the most often (99 times or 35.8%) by the colleges. Using appropriate software to supplement the regular instruction of LD students was the most popular educational method (62 times or 22.4%) designated by the colleges. Tool software, such as word processing, database and spreadsheets, was used most often with the educational method of support services to instruction (19 or 29.6%). Problem solving software, LOGO and simulations, was used most often as a supplement to regular instruction (11 or 23.4%). Curriculum related software, used primarily with math, science, history or other academic subjects, was also used predominantly as a supplement to instruction (14 or 21.8%). Drill and practice software, where repeated work on specific tasks is emphasized, was also used most often as a supplement to regular instruction (23 or 23.3%). Other uses of software was only chosen 3 times and 2 of those times was as a support service to instruction (66. 7%).

The last six questions of the survey listed and described a variety of software in six instructional categories. The colleges were requested to check off the software that their LD programs were now using or that they desired to use in the future. For each category, the colleges were also provided space to list any other pertinent software that they were currently

using or that they would like to use in the future. Software in the Reading/Spelling category was chosen the most by all of the colleges at the rate of 240 choices or 34% out of a total of 744 selections. Out of this total more choices were for software to be used in the future (397 or 53%) than software currently being used (347 or 47%). Within the software currently being used by the colleges the typing category had the greatest percentage of software being selected when compared to the other five categories. For the software desired to be used in the future the Reading/Spelling category had the greatest number (150) and percentage (60%) of software chosen when compared to the other categories. Looking specifically at the software in the word processing category, other software was being used more often. (These software are listed in the appendix to this report by category.) The second most popular choice was WordStar with eleven or 15.9% of the choices. Other software was also desired more often in the future. The second most popular choice was also WordStar with 9 or 15.8% of the selections. Software currently being used in the Reading/Spelling category also had other as the most popular choice. The second most used piece of software was Word Attack with 13 selections or 13.1%. Building Better Sentences and How to Read in the Content Areas tied for the most popular choice in the future with 10 or 6.7% of the choices each. Among software in the English category that is currently being used, other software was the most popular with Punctuation I & II coming in second with 5 or 15.2% of the choices. Capitalization and English Basics I & II tied for first place among software desired for future use, with 12 or 33.3% of the choices each. In the category of typing software, Typing Tutor was currently being used the most by the colleges with eleven or 48% of the choices. Mastertype was the top choice to be used in the future by 7 or 395 of the colleges. Other

software in the area of Interactive Problem Solving and Communication were presently being used the most, with Analogies and The Factory tying for second place with eight and 15.4% of the selections each. Finally, in the category of Mathematics software currently being used other software were chosen the most. Math Blaster was the second most popular with 10 and 14% of the choices. In software desiring to be used in the future, it was a three way tie for first place among Arcademic Skill Builders-Math, Edu-Ware Algebra Series and Survival Math with eight and 11.3% choices each.

In summary, the following are some of the major findings that can be attributed to the forty-three California Community Colleges that responded to the survey for this study:

1. Very few Limited English Proficient or Non-English Proficient students are being served by Learning Disabilities Programs.
2. The Apple Microcomputer is the most popular brand being used in the Learning Disabilities Programs.
3. The IBM Microcomputer is the most popular brand being used by college facilities that are available to LD students.
4. Apple Computers are the most popular among those LD specialists who have their own microcomputers at home.
5. The majority of colleges have microcomputer experts who are funded and staffed by the colleges.
6. The majority of Disabled Students Programs and Services have a plan to incorporate microcomputer use into Learning Disabilities Programs.
7. The majority of LD Specialists feel comfortable making general microcomputer related decisions.

8. The major funding source for microcomputers, software and for training in the use of microcomputers, in LD programs, is from the Disabled Student Programs and Services (AB77).
9. There is a paucity of microcomputer training being provided for the staff in the Learning Disabilities Programs.
10. There are insufficient fiscal resources available for the implementation or expansion of microcomputer use within the majority of Learning Disabilities Programs.
11. The majority of colleges have self-contained classes for professionally assessed LD students.
12. The majority of colleges have access to and use microcomputers for LD instruction.
13. Drill and practice, in general, is the most popular type of software and it is used mostly to supplement the regular instruction of LD students.
14. Specific software in Reading/Spelling is currently used and desired for future use by the majority of colleges.
15. The majority of colleges chose instructional software to be used with one or more of the three stages in the process of learning new information or a new skill.

APPENDICES

CALIFORNIA COMMUNITY COLLEGE DISTRICTS

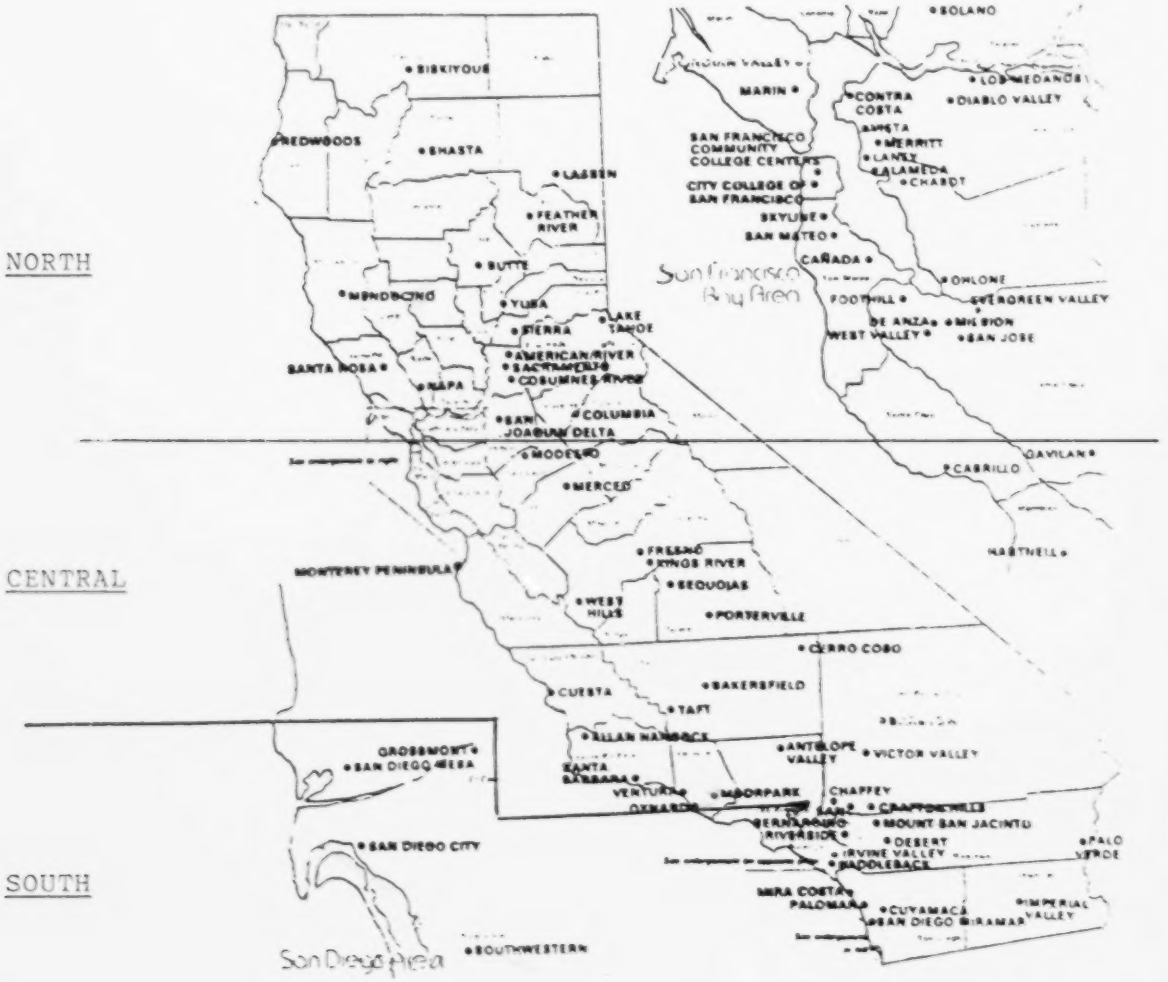
RESPONDING TO THE MICROCOMPUTER USE SURVEY*

* (Shaded Areas)

CALIFORNIA COMMUNITY COLLEGES

RESPONDING TO THE MICROCOMPUTER USE SURVEY*

* (Shaded Areas)



CENTRAL

SOUTH

Greater Los Angeles Area

CALIFORNIA COMMUNITY COLLEGES, LEARNING DISABILITIES PROGRAMS, MICROCOMPUTER USE SURVEY

This survey is conducted by Dr. Gilbert Robledo, Coordinator, Disabled Student Services, Santa Barbara City College. It is a 1987 spring sabbatical research project conducted at the Special Education Department, Graduate School of Education, at the University of California, Santa Barbara. This survey is confidential and the results will be reported in a group format. The goal is to obtain a statewide picture of the use of microcomputers by learning disabilities programs at the California Community Colleges. College identification will be used solely for possible survey clarification and statewide comparative purposes. Hopefully, this research will be used for college program and curriculum planning. Please take a few minutes of your very valuable time to fill out this survey. The statewide results will be sent to you this summer at the conclusion of the study. Thank you.

1. COLLEGE 43 DISTRICT 39

COLLEGE ADDRESS: _____

CITY _____ STATE _____ ZIP _____ PHONE (___) _____

2. Total number of students in your LD Program (Spring, 1987): Range=14-350 Total ave.=91

How many are Limited English Proficient?

%	#	
49	21	None
7	3(19)	Actual number
28	12(120)	Estimated number
16	7	I don't know.
100	43	TOTAL

LD Program size	#	%	Ave. size
14-49=Sm	11	27	33
60-95=Md	20	49	79
116-350=Lg	10	24	181
TOTAL	41	100	91

How many are non-English Proficient?

81	35	None
5	2(4)	Actual number
2	1(2)	Estimated number
12	5	I don't know.
100	43	TOTAL

3. How many students in your LD Program have their own microcomputers at home?

7	3	NR
9	4	None
12	5(15)	Actual number (Range 1-5) (Med=3)
51	22(176)	Estimated number (Range 1-44) (Median=8) (Mode=5)
21	9	I don't know.
100	43	TOTAL

4. Kind, number and location of microcomputers and printers in your LD Program:

19	8	a. None					Location	
(81%) 35		b. Computers (Number and Kind)	Number of Disk Drives		Printer (Yes/No)		%	#	Location
65	130	Apple	%	#	%	#	16.3	7	Office
21	41	IBM	20	9 = NR	37	16=No	23.3	10	Class
2	4	Radio Shack	46	20 = 2-6	44	19=Yes	25.6	11	Lab/Center
3	6	Commodore	30	12 = 7-13	19	8=NR	2.3	1	Next to class
9	19	Other	4	2 = 36-71			6.9	3	Comb. 1-3
100	200	TOTAL	100	43 TOTAL	100	43 TOTAL	2.3	1	Lab & classes
							23.3	10	NR
							100		TOTAL

5. Kind, number and location of microcomputers and printers in your college that are available to LD students in your LD Program:

(35%) 15 a. None

(65%) 28 b. Computers

%	(Number and Kind)	Number of Disk Drives			Printer (Yes/No)		
		%	#		%	#	
28.6	333 Apples	54	23	NR	47	20	NR
55.8	649 IBM	14	6	2-6	30	13	No
.1	1 Radio Shack	16	7	10-44	23	10	Yes
.5	6 Commodore	16	7	60-534	100	43	TOTAL
15.0	174 Other	100	43	TOTAL			
100	1163 TOTAL						

%	#	Location
2.3	1	Office
2.3	1	Class
46.5	20	Lab/center
4.7	2	Comb. 1-3
2.3	1	Library
7.0	3	Lab & classes
34.9	15	NR
100	43	TOTAL

6. Is there an individual at your college who is identified as the microcomputer expert or coordinator?

%	#		%	#	
19	8	No	11	5	NR
70	30	Yes. If yes: How is the position staffed?			
15	5	a. District staff.	100	43	TOTAL
70	24	b. College staff.			
	0	c. LD Program staff.			
9	3	d. Disabled Student Program & Services (DSPS) staff.			
	0	e. Volunteer staff.			
6	2	f. I don't know.			
100	34	TOTAL (Multiple responses)			

7. Does your LD Program have self-contained classes for professionally assessed LD students only?

21	9	No	Range=1-16
79	34	Yes. If yes: How many actual classes? 133 (29 colleges)	Ave.=4.59
100	43	On the average, how many students do they each serve? 607 (27 colleges)	

Ave. students/class=4.56
Ave. students/college=22.48
Range students/class=5-60

8. What is your level of microcomputer skills?

2	1	a. No competency; not interested.
16	7	b. No competency; interested.
47	20	c. Introductory skills.
26	11	d. Intermediate skills.
9	4	e. Advanced skills.
100	43	TOTAL

9. Do you or other LD instructors, within your program, have access to and use microcomputers for LD instruction?

21	9	No.
79	34	Yes. If yes: How many months have you or other LD instructors used microcomputers for instruction?
100	43	
11.6	5	a. 6 months or less.
14.0	6	b. 7 to 12 months.
14.0	6	c. 13 to 18 months.
9.3	4	d. 19 to 24 months.
20.9	9	e. 25 to 36 months or more.

	#	%
b,e	1	2.3
b,d,e	1	2.3
a,e	1	2.3
NR	10	23.3
TOTAL	43	100

10. What is the amount of access that you or the LD Program have to microcomputer use?

55	24	a. Daily LD classes.
18	8	b. Regular weekly schedule.
	0	c. Regular monthly schedule.
20	9	d. Unspecified, variable, or occasional schedule.
5	2	e. Daily, no classes
2	1	NR
100	43	TOTAL

11. Does your College Disabled Student Program & Services have a plan for incorporating microcomputer use into its LD Program?

%	#		
7	3		NR
19	8	a.	No
74	32	b.	Yes
100	43		TOTAL

12. In general, do you as the LD Specialist feel comfortable making various microcomputer related decisions?

30	13	a.	No
70	30	b.	Yes
100	43		

13. Which of the following personnel are involved in decisions to purchase microcomputers for your LD Program?

15.9	17	a.	College/District Administrator.
33.7	36	b.	Disabled Student Program & Services Coordinator.
30.8	33	c.	LD Program Specialist.
3.7	4	d.	DSPS/LD Program Microcomputer Committee.
2.8	3	e.	District/College Microcomputer Committee.
4.7	5	f.	District/College Chief Executive/Assistant Chief Executive.
.9	1	g.	Business/Private Industry.
6.6	7	h.	Other: _____
.9	1	i.	None.
100	107		TOTAL (Multiple responses from colleges)

14. Which of the following personnel are involved in decisions to purchase software for your LD Program?

8.4	7	a.	College/District Administrator.
31.3	26	b.	Disabled Student Program & Services Coordinator.
43.5	36	c.	LD Program Specialist.
6.0	5	d.	DSPS/LD Program Microcomputer Committee.
1.2	1	e.	District/College Microcomputer Committee.
1.2	1	f.	District/College Chief Executive/Assistant Chief Executive.
	0	g.	Business/Private Industry.
7.2	6	h.	Other: _____
1.2	1	i.	None.
100	83		TOTAL (Multiple responses)

15. How is the decision made for scheduling the use of microcomputers in your LD Program?

20.9	9	a.	Sign-up sheet.
7.0	3	b.	Administrative decisions.
9.3	4	c.	Fixed rotation schedule.
4.7	2	d.	Priority list.
25.6	11	e.	Other: 1st come 1st served; as needed; LD Spec. decides; classroom sch.; lab; class enrollment; within class; when free; scheduled sessions; and independently for mainstream classes
20.9	9	f.	Not applicable.

	%	#
a,c	4.7	2
a,e	4.7	2
a,b,d	2.3	1
TOTAL	100	43

16. What is the major funding source for the microcomputers owned by your LD Program?

11.4	8	a.	District funds.
41.4	29	b.	Disabled Student Program & Services (AB77) funds.
14.3	10	c.	Other State funds.
14.3	10	d.	Vocational Education Act (VEA) funds.
4.3	3	e.	Other Federal funds.
7.1	5	f.	Donations.
6.1	4	g.	Not Applicable.
1.1	1	h.	Grant (non-gov't.)
100	70		TOTAL

17. What is the major funding source for the software purchases within your LD Program?

%	#		
1.3	1		Don't know
9.2	7	a.	District funds.
42.1	32	b.	Disabled Student Program & Services (AB77) funds.
9.2	7	c.	Other State funds.
26.3	20	d.	Vocational Education Act (VEA) funds.
3.9	3	e.	Other Federal funds.
6.7	5	f.	Donations.
1.3	1	g.	Not Applicable.
100	76		TOTAL (Multiple responses)

18. What is the major funding source for training LD instructors and specialists to use microcomputers?

%	#		
4.3	2		None
2.1	1		Personal expense
6.4	3	a.	District funds.
40.4	19	b.	Disabled Student Program & Services (AB77) funds.
4.3	2	c.	Other State funds.
6.4	3	d.	Vocational Education Act (VEA) funds.
2.1	1	e.	Other Federal funds.
	0	f.	Donations.
34.0	16	g.	Not Applicable.
100	47		TOTAL (Multiple responses)

19. Which of the following describe the implementation or expansion of microcomputer use within your LD Program?

NR %	NR #	ACCURATE DESCRIPTION %	ACCURATE DESCRIPTION #	INACCURATE DESCRIPTION %	INACCURATE DESCRIPTION #		
7.1	5	6.8	14	12.1	24	a.	Sufficient LD faculty knowledge of microcomputers.
7.1	5	7.8	16	11.1	22	b.	Sufficient LD faculty skills in using micros.
8.5	6	6.8	14	11.7	23	c.	Sufficient LD faculty to teach using microcomputers.
11.3	8	4.9	10	12.7	25	d.	Sufficient microcomputer software.
8.5	6	11.2	23	7.1	14	e.	Adequate room in the LD curriculum.
9.8	7	3.9	8	14.2	28	f.	Sufficient fiscal resources.
4.2	3	9.8	20	10.2	20	g.	Sufficient microcomputer equipment.
5.6	4	8.8	18	10.7	21	h.	Sufficient physical space.
18.3	13	9.3	19	5.6	11	i.	Support from other units.
9.8	7	15.1	31	2.5	5	j.	Positive attitudes of administrators.
9.8	7	15.6	32	2.1	4	k.	Positive attitudes of faculty.
100	71	100	205	100	197		TOTAL

20. Are microcomputers being used to support the activities of faculty in the learning disabilities program:

%	#		
25.7	11	a.	For instructional purposes?
11.6	5	b.	For non-instructional purposes?
13.9	6	c.	Not being used at all.
9.3	4	d.	I don't know.

	%	#
a,b	34.9	15
a,b,c	2.3	1
NR	2.3	1
TOTAL	100	43

21. Do you own a microcomputer?

%	#		
2.3	1		NR
51.2	22	a.	No.
46.5	20	b.	Yes. What brand?
100	43		

Apple = 10
IBM = 4
Commodore = 1
Macintosh/ Mac + = 2
Atari, Whize, Sun = 1 each
TOTAL = 20

Number of years owned? Range=1-6 Ave.=2.7

22. Will you or other LD instructors in your program participate in microcomputer training during Spring, 1987?

%	#					
56	24	a.	No.			
44	19	b.	Yes. If yes: What type of training will it be?	%	#	
31.6	6	c.	Inservice.	100	43	TOTAL
	0	d.	Commercial/Vendor.	c,f	10.5	2
5.3	1	e.	University Sponsored.	d,e	5.3	1
42.0	8	f.	CCC Chancellor's Office High Tech Center	c,d,e	5.3	1
				TOTAL	100	19

23. During Spring, 1987, how many hours will the following providers of microcomputer training be used by your LD Program?

	HOURS:	NR	(1) 0	(2) 1-5	(3) 6-10	(4) 11-20	(5) 21-30	(6) 31-40	(7) 41+	Total Colleges Using Hours
a.	District staff	19	21	2			1			3
b.	College staff	13	17	6	3	2		1	1	13
c.	DSPS staff	15	16	3	3	1		1	4	12
d.	LD Program staff	18	15	1	4		1		4	10
e.	CCC High Tech Center for Disabled	19	19		1	1	1			1
f.	Private Consultants	22	19		2					2
g.	Institutions of Higher Education	23	19			1				1
h.	Special Education Resource Network	23	20							0
i.	Other	29	13	1						1
	TOTAL			13	13	5	3	2	11	47

24. Does your LD Program or in conjunction with other college departments:

%	#		
2.3	1	a.	Offer specific courses on microcomputers for LD students?
9.3	4	b.	Encourage LD students to enroll in college microcomputer classes?
4.7	2	c.	Offer LD courses that utilize microcomputers in the class?
4.7	2	d.	Offer LD courses that utilize the college CAI lab?
9.3	4	e.	Encourage LD students to enroll in regular college courses that have their own specific CAI labs?
7.0	3	f.	None of the above
23.3	10		b,c
2.3	1		b,d
11.5	5		b,d
7.0	3		b,c,e
9.3	4		a,b,c,e
2.3	1		a - e
4.7	2		b - e
2.3	1		a,b,e
100	43		TOTAL

25. Does your LD Program use any of the following types of software with any of the following educational methods?

EDUCATIONAL METHODS	TOOL (word processing, spreadsheets, database)		PROBLEM-SOLVING (logo, simulations)		CURRICULUM RELATED (Math, science, history)		DRILL & PRACTICE (Repeated work on specific tasks)		OTHER USES		TOTAL	
	%	#	%	#	%	#	%	#	%	#	%	#
SPECIAL CLASS INSTRUCTION	20.3	13	14.9	7	17.2	11	19.2	19			18.1	50
ALTERNATIVE TO REGULAR INSTRUCTION	4.7	3	6.4	3	6.3	4	9.1	9			6.8	19
SUPPLEMENT TO REGULAR INSTRUCTION	20.3	13	23.4	11	21.8	14	23.3	23	33.3	1	22.4	62
FACTUAL LEARNING	4.7	3	14.9	7	17.2	11	13.1	13			12.3	34
HIGHER ORDER LEARNING	6.3	4	6.4	3	9.4	6	4	4			6.1	17
LABORATORY SKILL LEARNING	14.1	9	14.9	7	10.9	7	17.2	17			14.4	40
SUPPORT SERVICES TO INSTRUCTION	29.6	19	19.1	9	17.2	11	14.1	14	66.7	2	19.9	55
TOTAL	100	64	100	47	100	64	100	99	100	3	100	277
%.....	23.1		17		23.1		35.8		1		100	

26. Are microcomputers and software in your LD Program used to teach students to:

%	#		
20.9	9	a.	Learn to make the best decisions?
4.7	2	b.	Talk about an idea or discovery in the lesson?
39.5	17	c.	Neither.
16.3	7	d.	I don't use computer assisted instruction.

	%	#
a,b	18.6	8
TOTAL	100	43

27. Do you or the other LD instructors in your program select instructional software to be used in conjunction with the following stages in the process of learning new information or a new skill?

2.3 1	a.	Initial acquisition of new learning, where the goal is accuracy.
9.3 4	b.	Mastery of a new task, where tha goal is accuracy and speed.
9.3 4	c.	Generalization or transfer of new learning where the goal is to enhance performance in nonspecial environments.
34.9 15	d.	None of the above.
18.6 8		a,b
23.3 10		a,b,c
2.3 1		b,c
100 43		TOTAL

IN QUESTIONS 28-33 PLEASE LEAVE BLANK IF YOU ARE NOT USING OR DO NOT WANT TO USE ANY OF THE FOLLOWING SOFTWARE IN THE FUTURE.

28. Does your LD Program now use or desire future use of any of the following software in the area of WORD PROCESSING:

% NOW	# NOW	% FUTURE	# FUTURE		
		3.5	2	a.	APPLE PIE (Programma) Full range word processing program, supporting all features. Editing is made somewhat difficult.
13	9	3.5	2	b.	APPLEWRITER II (Apple Computer, Inc.) Full range word program. Editing is somewhat difficult, can't overwrite text.
23.2	16	12.3	7	c.	BANK STREET WRITER (Broderbund) Easy-to-use word processing program, with a tutorial. Ample for most papers, reports, lists.
14.5	10	14.0	8	d.	BANK STREET SPELLER (Broderbund) Spelling check program that checks files created using Bank Street Writer only.
2.9	2	8.8	5	e.	HOMEWORD (Sierra On-Line) Full-range word processing program. The menus of functions appear as pictures (icons).
1.5	1	7	4	f.	KID WRITER (Spinaker) Designed for elementary-age students. A graphics capability is built in.
		7	4	g.	SCREEN WRITER II (Sierra On-Line) Full range word processing program. Allows 70 column display and has a useful command chart.
		5.3	3	h.	WORD HANDLER II (Silicon Valley Systems) Allows 66 characters on the APPLE screen instead of the usual 40 with no extra hardware.
15.9	11	15.8	9	i.	WORDSTAR (MicroPro) Popular and very powerful word processing program available for most microcomputers (requires CP/M).
29	20	22.8	13	j.	OTHER (Specify): _____
100	69	100	57		TOTAL

29. Does your LD Program now use or desire future use of any of the following software in the area of READING/SPELLING?

%	NOW #	%	FUTURE #		
3.1	3	4.0	6	a.	ARCADEMIC SKILL BUILDERS (DLM) New series of programs with VERB VIPER, WORD INVASION, WORD MASTER, WORD RADAR, SPELLING WIZ. All in arcade game format for elementary age students.
2.0	2	6.7	10	b.	BUILDING BETTER SENTENCES (Milton Bradley) Two programs: Combining Sentence Parts & Crating Compound and Complex Sentences. Programs are tutorials and have teaching guides.
7.1	7	4.0	6	c.	COMPU-READ (Edu-ware) Four programs. First has sets of three letters for recall. Second has recall of words and phrases. Third requires synonyms or antonyms of words. Fourth has questions about sentences.
6.1	6	4.0	6	d.	COMPU-SPELL (Edu-Ware) Data disks graded 4-8 and Adult/ Secretarial. Spelling words presented in sentence context.
6.1	6	3.3	5	e.	CROSSWORD MAGIC (Lightning Software) Lists of words and clues entered and arranged by the computer into a crossword puzzle.
2.0	2	5.3	8	f.	FRY INSTANT WORDS (Jamestown) Drill on word recognition and spelling. Based on Fry list of 300 high frequency words.
1.0	1	5.3	8	g.	THE GAME SHOW (Computer Advanced Ideas) Password-like program for vocabulary development. Graphics used to display clues.
1.0	1	6.7	10	h.	HOW TO READ IN THE CONTENT AREAS (Educational Activity) Four disks (Science, Social Studies, Literature, Mathematics) offer several reading passages each. Basically text translated to screen.
1.0	1	5.3	8	i.	MASTERING PARTS OF SPEECH (Sunburst) Ten programs mostly in the question/remediation format. Prints worksheets and tests.
4.1	4	6.1	9	j.	OUR WILD AND CRAZY WORLD (Educational Activity) Two disk set (Literal Comprehension & Critical Reading) with stories for secondary/adult interest. Has cloze practice and questions.
9.1	9	5.3	8	k.	PARTS OF SPEECH (Hartley) Five disks (homonyms, nouns/pronouns, roots/affixes, antonyms/synonyms, verbs). Tutorial drill used.
2.0	2	5.3	8	l.	READING COMPREHENSION: MAIN IDEAS AND DETAILS (Milton Bradley) Tutorial program with topic sentences, support details and main idea.
1.0	1	5.3	8	m.	SENTENCES (Micro Power & Light) Instruction in subjects, predicates, and fragments presented in tutorial form.
		3.3	5	n.	SPELLING BEE WITH READING PRIMER (Edu-Ware) High resolution graphics to associate familiar objects with words.
1.0	1	3.3	5	o.	SPELLING MACHINE (Southwest EdPsych Services) Commonly used words (elementary level) are pesented in sentence context.
2.0	2	4.6	7	p.	SPELLING RULES (Micro Power & Light) A tutorial consisting of six lessons. Game used for reinforcement of topics presented.
		4.0	6	q.	SPELLING SORCERY (Southwest EdPsych Services) Three game formats used to present graded word lists. Lists can be edited.
2.0	2	2.1	3	r.	STORY MACHINE (Spinnaker) For severe language problems. With primary vocabulary short stories written and displayed graphically.
2.0	2	3.3	5	s.	SUNSET SOFTWARE SERIES (Sunset Software) Five programs: Understanding Questions, Understanding Sentences, Absurdities, Paragraph Comprehension, Understanding Stories. Higher functioners.
5.1	5	5.3	8	t.	WHOLE BRAIN SPELLING (SubLOGIC) 6 disks. Color cues, graphics, and sequential format all used to instruct in word visualization.
13.1	13	4.7	7	u.	WORD ATTACK (Davidson) Four exercises for vocabulary building based on existing data files or instructor-made lists.
29.2	29	2.8	4	v.	OTHERS (Specify) _____
100	99	100	150		TOTAL

30. Does your LD Program now use or desire future use of any of the following software in the area of ENGLISH:

NOW %	NOW #	FUTURE %	FUTURE #		
12.1	4	33.3	12	a.	CAPITALIZATION (Educational Activities) A tutorial plus drill in capitalization. Good use of graphic display.
15.2	5	27.7	10	b.	PUNCTUATION I & II (Educational Activities) Two disks cover proper placement of common punctuation marks. Tutorials.
12.1	4	33.3	12	c.	ENGLISH BASICS I & II (Educational Activities) Eight disks: Nouns, Pronouns, Verbs, Adjectives, Adverbs, Homonyms, Synonyms, Contractions (I & II for all eight disks). Tutorial/quiz.
60.6	20	5.7	2	d.	OTHERS (Specify) _____
100	33	100	36		TOTAL

31. Does your LD Program now use or desire future use of any of the following software in the area of TYPING:

NOW %	NOW #	FUTURE %	FUTURE #		
26	6	39	7	a.	MASTERTYPE (IBM, Lightning Software) Keyboarding skills are taught and practiced in a game format. MAKE LESSON option.
4	1	22	4	b.	TYPE ATTACK (Sirius Software) Content and progression similar to MASTERTYPE, but graphics not as good. Starts with letters.
48	11	33	6	c.	TYPING TUTOR (Microsoft) Non-graphic keyboarding practice. Begins with basic keys and moves to longer passages.
22	5	6	1	d.	OTHERS (Specify) _____
100	23	100	18		TOTAL

32. Does your LD Program now use or desire future use of any of the following software in the area of INTERACTIVE PROBLEM SOLVING AND COMMUNICATION:

NOW %	NOW #	FUTURE %	FUTURE #		
15.4	8	16.9	11	a.	ANALOGIES (Program Design) Defines and describes analogies. Tutorial and Drill.
1.9	1	9.2	6	b.	ANNAM (Educational Activities) A simulation of happenings in a developing country. Good for small group interaction.
15.4	8	7.7	5	c.	THE FACTORY (Sunburst) Simulation of a factory. Analyze a finished product and design an assembly line to create it.
1.9	1	13.8	9	d.	IN SEARCH OF THE MOST AMAZING THING (Spinnaker) Simulation of a quest. Emphasizes economics, money, mapping, estimation, social sets.
3.8	2	12.3	8	e.	LOGO (Terrapin, Krell, Apple) A language to teach the computer to draw pictures. Sequence of operations, to organizational skills.
13.5	7	20	13	f.	MEMORY: THE FIRST STEP IN PROBLEM-SOLVING (Sunburst) Parts A and B. A collection of memory games. Sequences, parts and groups of items.
13.5	7	9.2	6	g.	ROCKY'S BOOTS (The Learning Company) Easy to use, well documented program to explore simple logic circuits and interact with computer.
3.8	2	10.9	7	h.	SNOOPER TROOPS (Spinnaker) Two cases available. Graphics used well. Obtain and classify information, make maps, notes, and conclude.
30.8	16		0	i.	OTHERS (Specify) _____
100	52	100	65		TOTAL

33. Does your LD Program now use or desire future use of any of the following software in the area of MATHEMATICS:

% NOW	# NOW	% FUTURE	# FUTURE		
2.8	2	11.3	8	a.	ARCADEMIC SKILL BUILDERS-MATH (DLM) Six disks on addition, subtraction, miltiplication, division, and two on mixed problems.
4.2	3	8.5	6	b.	CHALLENGE MATH (Sunburst) Three graphically illustrated games are used to reinforce basic operations with whole numbers and decimals.
9.9	7	11.3	8	c.	EDU-WARE ALGEBRA SERIES (Edu-Ware) Six disk topics. Definitions, number line, sets; solving equations, inequalities; polynomials, factoring, graphing linear equations; irrational numbers, radicals.
7.0	5	8.5	6	d.	EDU-WARE FRACTIONS (Edu-Ware) Definitions and operations with fractions well-illustrated with "window" concept and graphics.
		7.0	5	e.	ELECTRONIC BLACKBOARD SERIES (Wepco) Four topics: algebra, trigonometry, function plotter, and precalculus algebra.
2.8	2	9.9	7	f.	FIGURE FUN NUMBER GAMES (Sunburst) Game and drill formats for basic operations, place value, metrics, estimating, and prime factors.
14.0	10	7.0	5	g.	MATH BLASTER (Davidson) Two drill game format disks. With four basic operations, fractions, decimals, and percents.
5.6	4	7.0	5	h.	MATH SEQUENCES (Milliken) Twelve disk topics in basic math. An extensive record keeping function is built into the program.
2.8	2	8.5	6	i.	MILTON BRADLEY MATH SKILLS (Milton Bradley) Five drill/tutorial disks based on task analysis of math skills.
2.8	2	7.0	5	j.	MONEY! MONEY! (Hartley) Uses graphics to illustrate bills and coins. Drill on value, more/less, and making change. Primary level.
9.9	7	11.3	8	k.	SURVIVAL MATH (Sunburst) Four simulations. Smart Shopper Marathon (find the best buys), Hot Dog Stand (purchase food, set prices), Travel Agent Contest (plan a trip within a given budget), Foreman's Assistant (plan a playroom, buy materials).
38.1	27	2.7	2	l.	OTHERS (Specify)_____
100	71	100	71		TOTAL

Thank you very much for taking time from your very busy schedule to complete this survey. Hopefully, the results from this state-wide survey will shed some light on how microcomputers are being utilized within our Learning Disabilities Programs.

Please return the survey in the enclosed self-addressed and stamped envelope.

I want to thank Farah Fisher and the CAPED LD-CAI Consortium for the use of their 1984 Software Evaluation results for information in questions 28-33.

Please complete the information below if your wish to have the results of the survey sent to you.

NAME _____

ADDRESS _____

#28 Word Processing Other Software

Now	Future		
	1	1.	Milliken Word Processor
	1	2.	Milliken Writing Workshop
5	3	3.	AppleWorks
1		4.	Word Talk
6		5.	Fred Writer (Apple)
1		6.	WordStar 2000
2	1	7.	Mind Reader (Businessoft)
1	1	8.	Turbo Lightning (with WordStar, Spellcheck and Thesaurus, Perfect Write, Calc and File)
	1	9.	Max Think
	1	10.	Word Perfect
	1	11.	"Filch"
	1	12.	Sensible Speller
1		13.	Applewriter
2	1	14.	P.F.S. Write
	1	15.	Microsoft Word
1		16.	Lotus (IBM, KayPro)
20	13		TOTAL

#29 Reading/Spelling Other Software

Now	Future	
1		1. Micro Read (American Ed. Computer Inc.)
1		2. Word Structure
1		3. Cloze Plus (C-H)
	1	4. Word Search
	1	5. Create-Spell it
2	1	6. Phrase Reading I & II (Creative Curriculum)
4		7. Spell it (Davidson)
1		8. Speed Reader (Davidson)
	1	9. Software (from CCC High Tech Center)
1		10. Grammar Examiner
1		11. Word Finder
1		12. Spelling with Precision
1		13. Where in the World is Carmen San Diego?
1		14. Love, Hartley, Sunburst Series
1		15. Prefix Pack (Sunburst)
1		16. Core Reading (Educational Activities)
1		17. Missing Links (Sunburst)
11		18. Wizard of Words (Neely & Aaronson)
1		19. Various Sunburst
1		20. Various Steck Vaughn
1		21. Syllable Plus/Roots/Prefixes (Stoner)
1		22. Sensible Speller (Sensible Software)
1		23. Vocabulary Builder (1 & 2 Applesoft)
1		24. Elementary Language Arts, Prefixes (Huntington #5)
1		25. Grammar in Color (Colorgraphics)
1		26. Speed Read II
1		27. PAVE
29	4	TOTAL

#30 English Other Software

Now	Future	
1		1. Sentence Structure
1		2. Word Structure
1		3. Figurative Language
1		4. English Language I - IV
2		5. Punctuation Skills: End Marks, Semicolon and Colon, Commas (Milton Bradley)
	1	6. Parts of Speech I & II
	1	7. English: Basic Mechanics
1		8. Plato Writing and Language Skills
1		9. Grammar Examiner
1		10. Writer's Helper
1		11. Apple II Practical Composition II, III, IV, V
1		12. Capitalization, Verb Usage (Hartley)
1		13. The Writing Lab (Gorilla Software)
1		14. Verbs, Prepositions, Intro to Punctuation (Intellectual Software)
2		15. Punctuation Put-On (Sunburst)
1		16. Language Arts Series (Hartley)
1		17. Fundamental Punctuation Practice (Random House)
1		18. Grammar in Color (Colorgraphics)
1		19. Dolphin (Houghton Mifflin)
1		20. Queue--Parts of Speech (Educulture)
20	2	TOTAL

#31 Typing Other Software

Now	Future	
	1	1. Type to Learn (Sunburst)
1		2. Typing Strataegy
1		3. Sunburst
1		4. Academic Therapy--Typing Keys to Computer Ease
1		5. Mastertype (Apple IIe)
1		6. Keyboarding (Alpha-Pac)
5	1	TOTAL

#32 Interactive Problem Solving & Communication Other Software

Now	Future	
1		1. Right Turn: Problem Solving
1		2. The Pond: Strategies in Problem Solving
1		3. Color Keys: Strategies in Problem Solving
1		4. Problem Solving II, Sub Goaling (Dr. Robert Sbordone)
1		5. Memory Myth (Micro Power and Light)
1		6. Improving Your Memory (Microcomputer Educ. Prog.)
1		7. Puzzle Tanks (Sunburst)
1		8. Color Keys (Sunburst)
1		9. Code Quest (Sunburst)
1		10. High Wire Logic (Sunburst)
1		11. Matchword
1		12. Mind Castle I
1		13. Building Inference Skills (Media Materials, Inc.)
1		14. Oregon Train (MECC)
1		15. Cognitive Rehabilitation (Hartley)
1		16. Dolphin (PDP II)
16	0	TOTAL

#33 Mathematics Other Software

Now	Future	
	1	1. Algebra Tutor I (Learning Well)
	1	2. Tobbs Learns Algebra (Sunburst)
2		3. Problem Solving in Everyday Math (Interpretive Ed.) (MCE)
1		4. Dallas Math
1		5. TYC Drillware Math
1		6. Math Doctor
1		7. Math Baseball
1		8. Dr. Oz's Cavern
1		9. Softswap Math
1		10. Adventures with Fractions etc. (IBM)
1		11. Success with Math etc. (IBM)
1		12. Math Shop
1		13. Homework Helper
2		14. Math Word Problems (Spinnaker)
1		15. Skill Tester (Allyn & Bacon)
1		16. Growgin's Fractions (MECC Math)
1		17. Adventures with Fractions (MECC Math)
1		18. Ratio & Proportion (Educational Activities)
1		19. Read & Solve Math Problems (Educ. Activities)
1		20. Math Maze
1		21. The King's Rule
1		22. Algebra Word Problems
1		23. Basic Math Competence Skill Drills (Educ. Activities)
1		24. Algebra Volumes 1-6 (Peachtree Software)
1		25. Fun with Math (MECC)
1		26. Equation 48K-Apple (Microcomputer Workshops Courseware)
1		27. Dolphin Math
27	2	TOTAL

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